REMARKS

Claims 1-46 are pending.

A substitute set of formal drawings is submitted.

Claims 9, 10, 28, 29 and 45 stand rejected under §112 for use of the term "towards a uniform random graph". Reference is made to page 8, lines 2-3 and page 11, line 22 of the specification where the term "random graph" is used and is explained as being a more "normal" or Gaussian distribution. The claims have been amended to reflect the Gaussian type distribution. The claims are now in proper form.

Claims 1, 5, 7, 15, 21, 23, 24, 26, 40, 42 and 43 are rejected as being anticipated by Kennedy et al US 2004/0216582. Claims 5, 7, 15 and 21 depend from independent method claim 1; claims 24, 26, and 40 depend from independent apparatus claim 23; and claim 43 depends from independent apparatus claim 42.

The subject invention is directed to a data processing system that includes a plurality of software agents of the self–organizing type. The object of the invention is to establish a topology of the inter-agent relationships such that a topology corresponding to at least one criterion can be satisfied. For example, it might be desired to have the topology of the "power curve" type, more connections to fewer nodes or agents so as to be relatively robust against random node failure, or to have the topology of a "bell (Gaussian) curve" type so that the system will be more robust against attack on individual nodes.

To accomplish this, the present invention as set forth in claim 1 establishes a topology to address at least one criterion, such as to make the system more robust or to minimize the effect against node attack, and provides a topology tuner agent that obtains information including inter-agent relationships from the other agents in the data processing system that is descriptive of the existing network topology. The obtained information is compared to the topology that addresses the at least one criterion and the topology tuner agent can make at least one recommendation to at least one of the plurality of agents that is intended to modify the existing topology to more closely match the topology of the at least one criterion.

The Kennedy patent publication is directed to an ad hoc network whose purpose is to establish links between a plurality of wireless mobile nodes to allow the transmission of data between a source node and a destination node. This is not a data processing system as set forth in claim 1. Kennedy operates to use the network routes to predict failure and to perform route maintenance based upon predicted route failure. There is nothing in the Kennedy patent publication that corresponds to the topology tuner agent as set forth in claim 1 and the manner in which it is used to obtain the existing topology information, compare the obtained information with the topology that satisfies the at least one desired criterion and then make at least one recommendation to at least one on the plurality of agents that is intended to modify the topology to more closely match the topology of the at least one criterion. In rejecting claim 2, discussed below, the Examiner notes that Kennedy does not show obtaining information by using a topology tuner agent. This clearly demonstrates that claim 1 is not anticipated by and also is patentable over Kennedy. Accordingly, it is clear that independent claim 1 sets forth a novel and advantageous method that is not taught or suggested by the Kennedy patent publication. Therefore, claim 1 and its dependent claims are patentable over Kennedy and should be allowed.

Independent claim 23 is directed to the topology tuner agent operable in a data processing system and describes the operation of its computer program code. The functions of the computer program code are the same as those described above with respect to claim 1. That is, the computer program code operates to obtain the existing topology information, compares the information obtained to the topology that satisfies at least one criterion and makes at least one recommendation to at least one of the plurality of software agents to modify the topology to be closer to the topology corresponding to the at least one criterion. For the reasons given above with respect to claim 1, the Kennedy patent publication also does not suggest computer code that operates in the manner set forth in claim 23. Therefore, this claim and its dependent claims also are patentable and should be allowed.

Independent claim 42 is the apparatus analog of Independent claim 1. Claim 42 also has been amended in a manner similar to that of claim 1. For the reasons given above with respect to claim 1, this claim and its dependent claim 43 also are patentable over Kennedy and

should be allowed.

Claims 2, 3 and 4 are rejected as being unpatentable over the combination of the Kennedy publication in view of Assa US patent publication 2004/0059812. Assa is relied on for showing a topology tuner agent. In Assa the Examiner refers to [61-66] as describing the topology tuner agent. While the components of Assa that the Examiner relies on to correspond to the topology tuner agent of claim 1, from which claims 2, 3 and 4 depend, these components do not perform the same active functions as the tuner agent as set forth in claim 1 of the agent making the comparison and making at least one recommendation. Therefore, these claims also are patentable and should be allowed.

Claims 6, 9, 10, 25, 28, 29 and 44 are rejected over the combination of Kennedy in view of Swiler et al USP 7,013,395. Swiler is relied on to show that at least one criterion can comprise a vulnerability of the topology to an attack directed to the one or more agents. While this may be true, the combination of Swiler with Kennedy does not cure the basic defects of Kennedy discussed above relative to independent claim 1, from which claims 6, 9, and 10 depend, independent claim 23 from which claims 25, 28 and 29 depend and independent claim 42 from which claim 44 depends. Therefore, these dependent claims also are patentable and should be allowed.

Claims 10, 29 and 45 are rejected as being unpatentable over the combination of Kennedy in view of Swiler, as applied to claims 9 and 28, and further in view of Brandt US patent publication 2004/0117624. Brandt is relied on for the future of removing suspicious computers from the network and thereby disclosing constraining the set of potential agents that an agent may select from. Again, the addition of Brandt does not cure the failure of the basic reference of Kennedy to satisfy the subject matter of independent claim 1, from which claim 10 depends, of independent claim 23, from which claim 20 depends, or independent claim 42 from which claim 45 depends. Therefore, these claims also should be allowable.

Claims 8, 20, 27, 38 and 44 are rejected as being unpatentable over the combination of Kennedy view of Stanforth patent publication
US 2004/0081166. Stanforth is cited for a teaching of where at least one criterion can comprise a

rate at which agents can form new relationships. Claims 8, 20 and 27 depend from independent claim 1, claim 30 depends from independent claim 23 and claim 44 depends from independent claim 42. The dependent claims add further novelty to the parent claims which patentably distinguish whether the cited references for the reasons given above. Therefore, these claims also should be allowable.

Claims 11, 30 and 46 are rejected as being unpatentable over the combination of Kennedy in view of Brandt and further in view of the Albert publication cited to show how networks can evolve to become scale–free. The addition of the Albert reference to the basic combination of Kennedy and Brandt still does not meet the terms of the independent claims 1, 23 and 42, from which claims 11, 30 and 46 respectively depend. Therefore, these claims also should be allowable.

Claims 12, 13, 14, 31, 32 and 33 are rejected as being unpatentable over the combination of Kennedy in view of Habertha USP 7,031,321 which is cited for teaching the monitoring of drift during system operation. Again, considering the subject matter of Independent claim 1, from which claims 12, 13 and 14, and independent claim 23, from which claims 31, 32 and 33 depend, these claims also should be allowable for the reasons given above with respect to the independent claims.

Claims 16 and 34 are rejected over the combination of Kennedy in view of Liu USP 7,184,421. The Liu patent is relied on to show a single-cast technique to individually contact the agents. Claims 16 and 34 respectively depend from the independent claims 1 and 23 and for the reasons given above with respect to the allowability of the independent claims, the dependent claims 16 and 24 also should be allowable.

Claims 17 and 35 are rejected over the combination of Kennedy in view of Goldman US patent publication 2003/0046583. Goldman is relied on for teaching that a recommendation can apply to all types of relationships between agents. These two claims which respectively depend from the independent claims 1 and 23 also should be patentable for the reasons given above with respect to the independent claims.

Claims 18, 19, 36 and 37 are rejected over the combination of Kennedy in view of

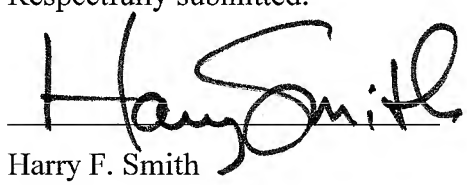
Cain USP 6,697,325. The addition of Cain to Kennedy does not cure the basic defects of the failure of Kennedy to teach the novel subject matter of claim 1, from which claims 18 and 19 depend or claim 23, from which claims 36 and 37 depend. Therefore, these claims also should be allowable.

Claims 22 and 39 are rejected over the combination of Kennedy in view of Hanzik US patent publication 2004/0044891. Claim 41 is rejected as being unpatentable over Kennedy in view of Ikeda USP 5,091,920. Again, for the reasons given above with respect to independent claim 1, from which claim 22 depends and claim 23 from which claims 39 and 41 each depend, these claims also are patentable and should be allowed.

The Examiner is respectfully requested to reconsider and remove all of the rejections, and to pass this patent application to issue.

Prompt and favorable action is respectfully requested.

Respectfully submitted:



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